

## CLAIMS

What is claimed is:

- 5 1. A retainer for securing a heat sink to a circuit board component, the retainer comprising:
  - a base portion;
  - a plurality of arms coupled to the base portion; and
  - a plurality of tabs coupled to the plurality of arms, each of the plurality of tabs
  - 10 configured to move between a first position and a second position relative to the base portion, the base portion, the plurality of arms, and the plurality of tabs configured, when the plurality of tabs move from the first position to the second position, to capture at least a portion of the heat sink and at least a portion of the circuit board component to secure the heat sink to the circuit board component.
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2. The retainer of claim 1 wherein the base portion, the plurality of arms, and the plurality of tabs are integrally formed.
3. The retainer of claim 1 wherein each of the plurality of tabs is configured to position
- 20 between two adjacent fins of the heat sink.
4. The retainer of claim 1 wherein the base portion comprises a first rail, a second rail integrally formed with and substantially perpendicular to the first rail, and a third rail integrally formed with and substantially perpendicular to the second rail, the first rail, the
- 25 second rail, and the third rail configured to engage a slot along a perimeter portion of the circuit board component.
5. The retainer of claim 1 wherein each of the plurality of arms comprises a latch, the latch allowing deflection of each of the plurality of arms upon placement of the heat sink
- 30 in contact with the latch and configured to allow retraction of each of the plurality of arms

upon placement of the heat sink in thermal communication with the circuit board component.

6. The retainer of claim 1 wherein the retainer comprises a nonconductive material.

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7. A heat sink assembly comprising:

a heat sink; and

a retainer for securing the heat sink to a circuit board component, the retainer

having:

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a base portion,

a plurality of arms coupled to the base portion, and

a plurality of tabs coupled to the plurality of arms, each of the plurality of

tabs configured to move between a first position and a second position relative to

the base portion, the base portion, the plurality of arms, and the plurality of tabs

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configured, when the plurality of tabs move from the first position to the second

position, to capture at least a portion of the heat sink and at least a portion of the

circuit board component to secure the heat sink to the circuit board component.

8. The heat sink assembly of claim 7 wherein the base portion, the plurality of arms, and

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the plurality of tabs are integrally formed.

9. The heat sink assembly of claim 7 wherein the heat sink comprises a plurality of fins

and wherein each of the plurality of tabs is configured to position between two adjacent

fins of the heat sink.

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10. The heat sink assembly of claim 7 wherein the base portion comprises a first rail, a

second rail integrally formed with and substantially perpendicular to the first rail, and a

third rail integrally formed with and substantially perpendicular to the second rail, the

first rail, the second rail, and the third rail configured to engage a slot along a perimeter

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portion of the circuit board component.

11. The heat sink assembly of claim 7 wherein each of the plurality of arms comprises a latch, the latch allowing deflection of each of the plurality of arms upon placement of the heat sink in contact with the latch and configured to allow retraction of each of the plurality of arms upon placement of the heat sink in thermal communication with the circuit board component.

12. The heat sink assembly of claim 7 wherein the retainer comprises a nonconductive material.

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13. A circuit board assembly comprising:

a circuit board and a circuit board component mounted to the circuit board; and

a heat sink assembly for cooling the circuit board component, the heat sink

assembly including:

15 a heat sink in thermal communication with the circuit board component, and a retainer for securing the heat sink to the circuit board component, the retainer having:

a base portion,

a plurality of arms coupled to the base portion, and

20 a plurality of tabs coupled to the plurality of arms, each of the plurality of tabs moveable between a first position and a second position relative to the base portion, the base portion, the plurality of arms, and the plurality of tabs capturing, when the plurality of tabs move from the first position to the second position, at least a portion of the heat sink and at least a portion of the circuit board component to secure the heat sink to the circuit board component.

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14. The circuit board assembly of claim 13 wherein the base portion, the plurality of arms, and the plurality of tabs are integrally formed.

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15. The circuit board assembly of claim 13 wherein the heat sink comprises a plurality of fins and wherein each of the plurality of tabs position between two adjacent fins of the heat sink.
- 5    16. The circuit board assembly of claim 13 wherein the base portion comprises a first rail, a second rail integrally formed with and substantially perpendicular to the first rail, and a third rail integrally formed with and substantially perpendicular to the second rail, the first rail, the second rail, and the third rail engaging a slot along a perimeter portion of the circuit board component.
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17. The circuit board assembly of claim 13 wherein each of the plurality of arms comprises a latch, the latch allowing deflection of each of the plurality of arms upon placement of the heat sink in contact with the latch and allowing retraction of each of the plurality of arms upon placement of the heat sink in thermal communication with the
- 15    circuit board component.
18. The circuit board assembly of claim 13 wherein the retainer comprises a nonconductive material.
- 20    19. A method for assembling a circuit board assembly comprising:  
          placing a base portion of a retainer in communication with a circuit board component;  
          placing a heat sink in thermal communication with the circuit board component;  
          placing a plurality of tabs, connected to the base portion, in communication with
- 25    the heat sink to secure the heat sink to the circuit board component.
20. The method of claim 19 wherein the step of placing the plurality of tabs comprises positioning the plurality of tabs between two adjacent fins of the heat sink.
- 30    21. The method of claim 19 wherein the step of placing a base portion of a retainer in

communication with a circuit board component comprises engaging the base portion with a slot along a perimeter portion of the circuit board component, the base portion having a first rail, a second rail integrally formed with and substantially perpendicular to the first rail, and a third rail integrally formed with and substantially perpendicular to the second rail.

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22. A retainer for securing a heat sink to a circuit board component, the retainer means comprising:

- a base portion means;
- 10 a plurality of arm means coupled to the base portion means; and
- a plurality of tab means coupled to the plurality of arm means, each of the plurality of tab means moveable between a first position and a second position relative to the base portion means, the base portion means, the plurality of arm means, and plurality of tab means configured, when the plurality of tabs move from the first position to the
- 15 second position, for capturing at least a portion of the heat sink and at least a portion of the circuit board component to secure the heat sink to the circuit board component.